

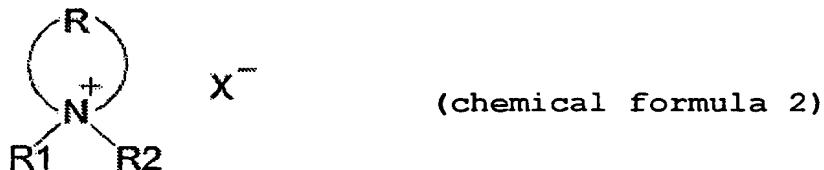
CLAIMS

1. A nonaqueous electrolyte which comprises an organic solvent and a lithium salt dissolved therein, characterized by containing at least one quaternary ammonium salt in an amount of 0.06 mol/L or larger and 0.5 mol/L or smaller.

2. The nonaqueous electrolyte of claim 1, characterized in that the quaternary ammonium salt has a structure represented by any of (chemical formula 1), (chemical formula 2), and (chemical formula 3):

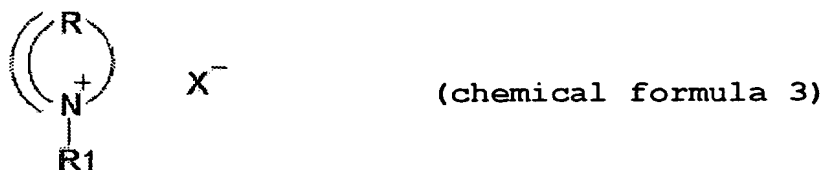


(wherein R1, R2, R3, and R4 each are either an alkyl group having 1-6 carbon atoms or an alkyl group in which at least part of the hydrogen atoms have been replaced by a fluorine atom; and X⁻ is a fluorine-containing anion)



(wherein R is a divalent organic linking group having a main chain which has 4-5 atoms and is constituted of at

least one member selected from carbon, oxygen, nitrogen, sulfur, and phosphorus; R1 and R2 each are either an alkyl group having 1-6 carbon atoms or an alkyl group in which at least part of the hydrogen atoms have been replaced by a fluorine atom; and X⁻ is a fluorine-containing anion)



(wherein R is an organic linking group or an organic linking group forming an aromatic ring, the organic linking groups each having a main chain which has 4-5 atoms and is constituted of at least one member selected from carbon, oxygen, nitrogen, sulfur, and phosphorus and having one single-bond end and one double-bond end; R1 is an alkyl group having 1-6 carbon atoms or an alkyl group in which at least part of the hydrogen atoms have been replaced by a fluorine atom; and X⁻ is a fluorine-containing anion).

3. The nonaqueous electrolyte of claim 1 or 2, characterized by containing one or more organic solvents selected from the group consisting of ethylene carbonate, propylene carbonate, butylene carbonate, γ-butyrolactone, and γ-valerolactone.

4. The nonaqueous electrolyte of any one of claims 1 to 3, characterized in that the anion species contained in the

nonaqueous electrolyte is one or more members selected from the group consisting of BF_4^- , PF_6^- , CF_3SO_3^- , $\text{N}(\text{CF}_3\text{SO}_2)_2^-$, $\text{N}(\text{C}_2\text{F}_5\text{SO}_2)_2^-$, $\text{N}(\text{CF}_3\text{SO}_2)(\text{C}_4\text{F}_9\text{SO}_2)^-$, $\text{C}(\text{CF}_3\text{SO}_2)_3^-$, and $\text{C}(\text{C}_2\text{F}_5\text{SO}_2)_3^-$.

5. A nonaqueous-electrolyte battery which comprises a positive electrode, a negative electrode, and a nonaqueous electrolyte, the battery having been fabricated using the nonaqueous electrolyte of any one of claims 1 to 4.

6. The nonaqueous-electrolyte battery of claim 5, characterized in that the negative electrode employs a graphite.

7. The nonaqueous-electrolyte battery of claim 5 or 6, characterized by having a sheath comprising a metal/resin composite material.